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1. A method of identifying a failed device in a network that includes plural devices, comprising:  
attempting to communicate with a target device;  
determining if the target device has an active  
5 neighbor if the attempt to communicate with the target device fails; and  
identifying the target device as a failed device if the target device has an active neighbor.


2. A method according to claim 1, wherein the  
10 attempting comprises sending a packet to the target device and waiting for a response from the target device.

3. A method according to claim 1, wherein:  
the determining comprises attempting to communicate  
with a neighbor of the target device; and  
15 the neighbor is determined to be active if the attempt to communicate is successful.

4. A method according to claim 1, further comprising locating a neighbor of the target device.

5. A method according to claim 4, wherein the  
20 locating comprises:  
generating a neighbor table for the network; and  
consulting the neighbor table to locate the neighbor of the target device.

6. A method according to claim 5, wherein the  
25 generating comprises:  
polling the target device;  
receiving a response from the target device; and

*Sub A1*  constructing the neighbor table based on the response.

7. A method according to claim 6, wherein:  
the polling is performed periodically; and  
5 the method further comprises updating the neighbor table based on the periodic polling.

8. A method according to claim 6, wherein:  
the response comprises a network address of the neighbor; and  
10 the neighbor table indexes the target device to the network address of the neighbor.

9. A method according to claim 8, wherein the target device:  
stores a Management Information Base (MIB) II table  
15 containing the network address of the neighbor; and prepares the response based on the MIB II table.

10. A method according to claim 1, wherein the target device comprises a router or a switch, and the neighbor comprises a router, a switch, or a computer.

20 ~~11.~~ A method of identifying a failed device in a network that includes plural devices, comprising:  
generating a neighbor table for the devices based on information provided from the devices; and  
sending a packet to a target device to determine if  
25 the target device is active;  
wherein, if the target device is not active, the method further comprises:

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locating a neighbor of the target device using  
the neighbor table;

sending a packet to the neighbor to determine  
if the neighbor is active; and

5 identifying the target device as a failed  
device if the neighbor is active.

12. An apparatus for identifying a failed device in  
a network that includes plural devices, comprising:

a memory which stores executable code; and

10 a processor which executes code (i) to attempt to  
communicate with a target device, (ii) to determine if the  
target device has an active neighbor if the attempt to  
communicate with the target device fails, and (iii) to  
15 identify the target device as a failed device if the target  
device has an active neighbor.

13. An apparatus according to claim 12, wherein the  
processor attempts to communicate with the target device by  
sending a packet to the target device and waiting for a  
response from the target device.

20 14. An apparatus according to claim 12, wherein:  
the processor determines if the target device has an  
active neighbor by attempting to communicate with a neighbor  
of the target device; and

25 the neighbor is determined to be active if the  
attempt to communicate is successful.

15. An apparatus according to claim 12, wherein the  
processor executes code to locate a neighbor of the target  
device.

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16. An apparatus according to claim 15, wherein the processor locates the neighbor by:  
generating a neighbor table for the network; and  
consulting the neighbor table.

5 17. An apparatus according to claim 16, wherein the processor generates the neighbor table by:  
polling the target device;  
receiving a response from the target device; and  
constructing the neighbor table based on the  
10 response.

18. An apparatus according to claim 17, wherein the processor performs the polling periodically and updates the neighbor table based on the periodic polling.

15 19. An apparatus according to claim 17, wherein:  
the response comprises a network address of the neighbor; and  
the neighbor table indexes the target device to the network address of the neighbor.

20 20. An apparatus according to claim 12, wherein the target device comprises a router or a switch, and the neighbor comprises a router or a switch.

21. A computer program stored on a computer-readable medium to identify a failed device in a network that includes plural devices, comprising:  
25 code to attempt communication with a target device;  
code to determine if the target device has an active neighbor if an attempted communication with the target device fails; and

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code to identify the target device as a failed device if the target device has an active neighbor.

22. A computer program according to claim 21, wherein the attempting code sends a packet to the target device and waits for a response from the target device.

23. A computer program according to claim 21, wherein:

the determining code attempts to communicate with a neighbor of the target device; and

the neighbor is determined to be active if an attempted communication is successful.

24. A computer program according to claim 21, further comprising code to locate a neighbor of the target device.

25. A computer program according to claim 24, wherein the locating code comprises:  
code to generate a neighbor table for the network;  
and

code to consult the neighbor table to locate the neighbor of the target device.

26. A computer program according to claim 25, wherein the generating code comprises:  
code to poll the target device;  
code to receive a response from the target device;

and  
code to construct the neighbor table based on the response.

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27. A computer program according to claim 26,  
wherein:

the polling code performs the polling performed  
periodically; and

5 the computer program further comprises code to  
update the neighbor table based on the periodic polling.

28. A computer program according to claim 26,  
wherein:

10 the response comprises a network address of the  
neighbor; and

the neighbor table indexes the target device to the  
network address of the neighbor.

29. A computer program according to claim 21,  
wherein the target device comprises a router or a switch,  
15 and the neighbor comprises a router or a switch.

30. A network system comprising:

a first device;

a second device; and

20 a third device located in a path between the first  
device and the second device on a network;

wherein the first device comprises:

a memory which stores executable code; and

25 a processor which executes code (i) to send a  
packet to the second device to determine if the  
second device is active, (ii) if the second device  
is not active, to send a packet to the third device  
to determine if the third device is active, and  
(iii) to identify the second device as a failed  
device if the third device is active.

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31. A network system according to claim 30, wherein the first device comprises a computer, the second device comprises a switch or a router, and the third device comprises a switch or a router.

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